REMARKS

In response to the Office Action mailed on September 21, 2007, Applicants respectfully request reconsideration. To further the prosecution of this Application toward allowance, Applicants submit the following remarks discussing patentability of rejected claims and add new claims 52-57. Applicants respectfully request that the application be passed to issue. The claims are being amended as indicated above. No new matter was added to the application when amending or adding these claims.

Rejection of Claim 1 under 35 U.S.C. § 102(e)

The Examiner has rejected original claim 1 under 35 U.S.C. § 102(e) based on Kompella (U.S. Patent 7,136,374). Applicants are appreciative of the Examiner's review of claim 1 and respectfully request further consideration of same in view of the following discussion pointing out why amended claim 1 is unique and non-obvious over the cited prior art. Applicants have amended claim 1 to further distinguish the claimed invention over the cited prior art to expedite the claims to allowance.

Amended Claim 1 reads as follows:

1. (Currently Amended) In a first node of a physical network supporting multiple virtual network connections, a method to dynamically modify configuration data supporting virtual networks, the method comprising:

receiving i) destination network address information associated with at least one host computer, and ii) a corresponding gateway identifier of a gateway in the physical network, the gateway being an ingress edge node of the physical network through which the at least one host computer communicates;

generating a notification message including the destination network address information and the corresponding gateway identifier; and

transmitting the notification message to a second node of the physical network enabling the second node to create a mapping between the at least one host computer and ~~establish~~ a virtual network connection between the second node and the first node on which to forward data messages from the second node through the gateway to the at least one host computer based on identifying, as specified by the mapping, that the data messages having the destination network address information are to be mapped to and sent over the virtual network connection to the at least one host computer through the gateway as specified by the corresponding gateway identifier.

The office action asserts that Kompella teaches all of the claim limitations. However, the office action takes official notice that network address information of a host computer is inherent in virtual private network connections. Applicants respectfully submit that the claimed invention includes distinguishing limitations evidenced by the fact that Kompella does not discuss use of network address information associated with a host computer to route data through an appropriate virtual network connection as recited by claim 1. Use of the destination network address information (which is not mentioned in Kompella as indicated in the office action) to create a mapping of messages to a virtual network connection is at least one aspect of the claimed invention distinguishing it over the cited prior art.

More specifically, the claimed invention is directed towards distributing destination network address information associated with at least one host computer to at least one other node (e.g., a second node) in a network. Via receipt of the network address information and gateway identifier, the second node creates a mapping between the network address information and a virtual network connection from the second node. Upon receipt of data to be forwarded to a destination such as the at least one host computer, the second node forwards the data by mapping the destination address to the appropriate virtual network connection on which to forward the data.

As mentioned above, the office action admits that Kompella does not specifically disclose network address information associated with a host computer. Applicants respectfully submit that Kompella does not disclose such a limitation because Kompella does not teach or suggest the claimed invention. For example, the office action recites Kompella at column 7 line 30, which reads as follows:

> Virtual private networks("VPNs") may be configured on a transport network by providing forwarding information regarding each customer edge device (CE) within a VPN to service provider edge devices (PEs) servicing at least one CE within the VPN. Unfortunately, however, such configuration is challenging. To avoid the need to make global changes to configuration information each time a new customer device (CE) is added to a VPN, the present invention may permit each customer edge device (CE) of a VPN to be configured locally at its associated service provider edge device (PE). The present invention may do so by signaling, to all other service provider edge devices in the VPN, an identifier of the service provider edge device, an identifier of the VPN, an identifier of the customer edge device (CE), a label base, and a channel (or circuit) range. Service provider edge devices (PEs) receiving such signaling may then provision "channels" or "routes" to map a channel (or circuit) identifier to a first label (used to get data from an ingress service provider edge device to an egress service provider edge device, and referred to as an "outer label" without loss of generality in the specification) and a second label (used to get data from the egress service provider edge device to a destination customer edge device, and referred to as "an inner label" without loss of generality in the specification). The PEs may further map inner labels from received data to a channel (or circuit) identifier associated with the destination customer device. (emphasis added)

This paragraph in Kompella merely indicates communication of data using channel identifiers as discussed further at column 7, line 1 of Kompella:

> The present invention may use channel (or circuit) identifiers to communicate data between client edge devices (CEs) and service provider edge devices (PEs). The present invention may use a layer 2 transport technology, such as label-switched paths (e.g., defined using MPLS), to communicate data between service provider edge devices (PEs) in a transport network. (emphasis added)

Note that the term "label" in the cited prior art refers to a corresponding channel on which to forward data between client edge devices in an MPLS network. The label corresponds to a path in the MPLS network on which to transmit the data. As indicated at column 7 lines 30-56, Kompella maps a channel identifier value associated with data to a corresponding first label and a second label for transmission of the data based on use of the labels. The labels are used to transmit the data in an MPLS network.

Channel identifier values in the cited prior art are not equivalent to destination network address information as recited by the claimed invention. That is, as discussed above, channel identifier values in the cited prior art identify channels of paths in a network. As its name suggests, destination network address information in the claimed invention defines a destination address of the at least one host computer. Channel identifiers refer to channels, not a host computer destination address. Thus, Kompella does not disclose mapping of destination network address information to a virtual network connection as recited by the claimed invention.

The claimed invention is useful over the cited prior art because dissemination of the destination network address information and the corresponding gateway identifier value from a first node to a second node such as an ingress nodes of a network enables the second node to create a map for purposes of forwarding data to and through the first node based on destination information associated with a host computer. Kompella requires that the data to be transmitted include a channel identifier value indicating a channel on which to forward data based on a label. Mapping according to the claimed invention links the destination network address information to a corresponding virtual

network connection on which t o forward data to and through the first node to a host computer. This is not taught or suggested by Kompella.

Based on the aforementioned remarks, Applicants respectfully submit that the invention as recited in claim 1 is neither anticipated nor obvious because it includes a unique and useful configuration not taught or suggested by the cited references. Thus, in view of the foregoing discussion, Applicants submit that claim 1 is patentably distinct and advantageous over the cited prior art, and the obviousness rejection should be withdrawn. Accordingly, Applicants respectfully request allowance of claim 1 and, by virtue of dependency, allowance of corresponding dependent claims 2-10 and 46-51.

Claim 11 includes similar limitations as claim 1, except in apparatus/system form. For example, claim 11 recites a computer system for dissemination of destination network address information associated with a target host computer to enable forwarding of the data over a network. Thus, for applicable reasons as discussed above, Applicants respectfully submit that claim 11 and corresponding dependent claims 12-20 are in condition for allowance as well.

Applicants respectfully submit that claims 41 and 42 are in condition for allowance for applicable reasons as discussed above for claim 1.

Applicants respectfully submit that each of dependent claims 2-10 include further patentable distinctions over the cited prior art as well.

For example, with respect to claim 2, the cited passage discusses distribution of virtual private network information. However, there is no indication of disseminating both network address information and a corresponding gateway identifier value, especially not as an appendix to a notification message. Accordingly, Applicants respectfully request allowance of claim 2.

With respect to claim 6, neither reference teaches or suggests delivery of the notification message to multiple customer edge nodes nor that the customer edge nodes update their corresponding configuration data in a way as specified by claim 6.

With respect to claim 7, neither reference teaches or suggests that customer edge nodes deliver a notification message with network address information and a corresponding gateway identifier value to another customer edge node as in the claimed invention.

Rejection of Claim 21 under 35 U.S.C. § 102(e)

The Examiner has rejected claim 21 under 35 U.S.C. § 102(e) based on Kompella (U.S. Patent 7,136,374). Applicants are appreciative of the Examiner's review of claim 21 and respectfully request further consideration of same in view of the following discussion pointing out why amended claim 21 is further unique and non-obvious over the cited prior art.

21. (Currently Amended) In a receiving node of a physical network supporting multiple virtual network connections, a method to dynamically modify configuration data associated with at least one of the multiple virtual network connections, the method comprising:

receiving a notification message from a sending node of the physical network, the notification message including destination network address information and a corresponding gateway identifier of a gateway of the physical network;

based on contents of the notification message, modifying a map at the receiving node to include the destination network address information, the corresponding gateway identifier, and configuration data identifying at least part of a virtual network connection between the receiving node and the sending node on which to forward data messages through the gateway to a destination node as specified by the destination network address information; and

upon forwarding data messages through the receiving node, utilizing the map to identify on which virtual network to forward the data messages from the receiving node through the gateway to the destination node based on the destination network address information associated with the destination node to which the data messages are directed.

Amended claim 21 recites "based on contents of the notification message, modifying a map at the receiving node to include the destination network address information, the corresponding gateway identifier, and configuration data identifying at least part of a virtual network connection between the receiving node..." As discussed above, there is no indication whatsoever a node in Kompella stores the destination network address information associated with a host computer to create a mapping function between the destination network address information and the virtual network connection on which to forward data. Applicants again point out that the office action admits that Kompella does not explicitly recite such a feature. This is because Kompella does not map data packets to a corresponding virtual network connection based on destination network address information of a target as is done according to the claimed invention.

Note that amended claim 21 further recites use of the destination network address information for purposes of forwarding the data. For example, claim 21 recites "upon forwarding data messages through the receiving node, utilizing the map to identify on which virtual network to forward the data messages from the receiving node through the gateway to the destination node based on the destination network address information associated with the destination node to which the data messages are directed."

Accordingly, in a similar vein as discussed above, Applicants respectfully request allowance of claim 21. By virtue of dependency, Applicants submit that claims 23-30

are in allowable condition as well, each of which include further patentable distinction over the cited prior art.

For similar reasons as discussed above, claim 31 and corresponding dependent claims 33-40 are in condition for allowance.

Applicants respectfully submit that amended claims 43 and 44 are also in condition for allowance for applicable reasons as discussed above for claim 21.

Applicants respectfully submit that amended claims 45 is in condition for allowance for applicable reasons as discussed above.

New Claims 52-57

Support for claims 52-57 can be found in figures 1-4 and corresponding text as well as elsewhere throughout the application. These claims include further limitations over the cited prior art as the cited prior art does not teach or suggest use of multiple virtual network connections between a first node and second node in a network. Additionally, the cited prior art does of the teach or suggest that there are multiple destination host computers residing externally to a service provider network and that routing within the service provider network is based on network address information associated with the network address information of the external destination host computers.

CONCLUSION

In view of the foregoing remarks, Applicants submit that the pending claims as well as newly added claims are in condition for allowance. A Notice to this affect is respectfully requested. If the Examiner believes, after reviewing this Response, that the pending claims are not in condition for allowance, the Examiner is respectfully requested to call the Applicant(s) Representative at the number below.

If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned Attorney at (508) 616-9660, in Westborough, Massachusetts.

Respectfully submitted,

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